



## House Bill 1428

### RSA 125-C Air Pollution Control

Amendments to RSA 125-C10-c  
Combustion Ban

Initial DES Stakeholder Meeting  
Thursday, June 30, 2016

1

---

---

---

---

---


---

---

---

## Agenda

- ◉ Summary HB 1428
- ◉ Background Information
  - Federal C&D Fuel Quality Standard
  - MSW Combustor Facility Description
  - Preliminary DES Research
- ◉ Process/Future Steps
- ◉ STAKEHOLDER INPUT



2

---

---

---

---

---


---

---

---

## HB 1428

- ◉ RSA 125-C Air Pollution Control
  - RSA 125-C:10-c, *Combustion Ban*
  - NO combustion: Construction & Demolition Debris (C&D Debris)
- ◉ HB 1428
  - Amends RSA 125-C:10-c, *Combustion Ban*



3

---

---

---

---

---

---

---


---

## HB 1428

### Combustion Limitations

---

- ◉ Less than <10,000 tons/year
- ◉ Only Nov 15 through Apr 15
- ◉ Only at one, existing MSW combustor
- ◉ Only select wood portion of C&D debris
  - C&D processed in manner no less stringent than federal C&D fuel standard
- ◉ Not until DES:
  - Adopts rules:
    - Fuel Quality Standards
    - Test Methods
  - Amends Permits



NHDES

4

---

---

---

---

---

---

---


---

## HB 1428

### Fuel Quality Standards

---

- ◉ C&D processed to extract wood portion
  - No less stringent than 40 CFR 241
- ◉ 40 CFR 241, *Solid Wastes Used As Fuels or Ingredients in Combustion Units*
  - EPA Standards
    - Solid Waste ⇒ Non-Hazardous Secondary Material (NHSM)
  - NHSM: Not solid waste when combusted



NHDES

5

---

---

---

---

---

---


---

---

## EPA NHSM Legitimacy Criteria

---

- ◉ Must be maintained as a valuable commodity
- ◉ Must have a meaningful heating value
- ◉ Must be used as a fuel in a combustion unit that recovers energy
- ◉ Must contain contaminant levels comparable to or lower than the traditional fuel of the combustion unit for which it is intended



NHDES

6

---

---

---

---

---

---

---

---

## Pathways to EPA NHSM Designation

- ◎ #1 Petition to USEPA
  - Case Specific determination
- ◎ #2 Categorical (defined in rule) :
  - USEPA determination for category
  - Seven categories
    - C&D wood (w/conditions)



7

---

---

---

---

---

---

---

---

## EPA C&D Fuel Quality Standards

- ◎ Wood portion only of C&D
- ◎ Exclude:
  - Non-wood materials
    - PVC & other plastics
    - Drywall
    - Concrete, aggregate, dirt, asbestos
  - Wood treated with creosote, pentachlorophenol, chromated copper arsenate, or other chrome, copper or arsenic preservatives.



8

---

---

---

---

---

---

---

---

## EPA C&D Fuel Quality Standards

- ◎ Processed from C&D debris
- ◎ Best Management Practices
  - Sorted by trained operators
  - Sorted by one of two methods:
    - Positive sorting – operators remove desirable wood from co-mingled debris
    - Negative sorting – operators remove undesirable materials from co-mingled debris, leaving desirable wood behind



9

---

---

---

---

---

---

---

---

## EPA Best Management Practices Positive Sorting Standards

### ◎ Positive sorting

- Exclude all painted wood, OR
- X-ray fluorescence to ensure that the painted wood in the final product fuel does not contain lead-based paint, OR
- Require documentation that the source of the C&D debris has been tested for and does not include lead-based paint



10

---

---

---

---

---

---

---

---

## EPA Best Management Practices Positive Sorting Standards

### ◎ Negative sorting

- Remove fines (small particles that may contain lead and other contaminants)

AND

- Exclude all painted wood, OR
- Use x-ray fluorescence to ensure that the painted wood does not contain lead-based paint, OR
- Require documentation that the source has been tested for and does not include lead-based paint



11

---

---

---

---

---

---

---

---

## EPA C&D Fuel Quality Standards

### ◎ Additional Requirements

- *Training* Processors must train operators to exclude unwanted materials. Training records must be retained for three years
- *Written certification* A written certification must be obtained by the combustor for every new or modified contract, purchase agreement or other legally binding document, from each final processor of clean C&D wood



12

---

---

---

---

---

---

---

---

EPA NHSM Data  
Clean C&D Wood v. Clean Wood/Biomass

TABLE 1.—COMPARISON OF CONTAMINANTS IN CLEAN WOOD/BIOMASS AND PROCESSED C&D WOOD					
Contaminant	Clean Wood/	Processed C&D Wood			
	Biomass Range	#Samples	Average	90% UPL	Maximum
CONTAMINANTS LIKELY TO BE PRESENT IN C&D DEBRIS					
Arsenic	ND-298	n = 221	35.9	91.8	261
Chromium	ND-340	n = 212	45	116	283
Lead	ND-340	n = 224	53.9	136	482
Mercury	ND-1.1	n = 180	0.1	0.16	0.7
Chlorine	ND-5400	n = 173	89.9	1,567	3,821
Fluorine	ND-300	n = 86	45.5	813	1,189
Sulfur	ND-5700	n = 183	1,300	2,000	7,800
Formaldehyde	1.6-2.7	n = 45	47.6	104.2	176.8
Pentachlorophenol	ND	n = 21	19.7	N/A	128
CONTAMINANTS LESS LIKELY TO BE PRESENT IN C&D DEBRIS					
Antimony	ND-26	n = 50	2.6	7.1	16.6
Beryllium	ND-10	n = 50	0.1	0.23	0.3
Cadmium	ND-17	n = 107	0.3	0.53	1.3
Cobalt	ND-213	n = 50	1.1	2.1	3.5
Manganese	ND-15800	n = 50	72.8	118	180
Nickel	ND-540	n = 50	4.0	8.6	27.4
Selenium	ND-9	n = 43	0.4	1.0	1.3
Nitrogen	200-39500	n = 75	3,900	8,000	12,600

13

---

---

---

---

---

---

HB 1428  
Combustion Limited to One Facility

- **MSW combustor**
  - Capacity 250+ ton per day before Jan 1, 2016
  - Subject to RSA 125-C or RSA 149-M
  - Have been in operation on Jan 1, 2016
- **NH = One Facility**
  - Wheelabrator Environmental Systems, Inc. – Concord
  - Existing air & solid waste permits issued by NHDES



14

---

---

---

---

---

---

## Wheelabrator - Concord Air Emission Standards

- Particulate matter
- Cadmium
- Lead
- Dioxins/furans
- Opacity
- Ammonia
- Nitrogen oxides
- Sulfur dioxide
- Carbon monoxide
- Mercury
- Hydrogen chloride
- Fugitive Ash

15

---

---

---

---

---

---

## Wheelabrator Concord Air Pollution Control Equipment

Pollution Control Equipment	Pollutant Controlled
Baghouse	PM & regulated metals
Spray Dryer Absorber (SDA)-lime injection	Hydrochloric and Sulfuric acid gas
Powdered Activated Carbon Injection	Mercury
Selective Non-Catalytic Reduction (SNCR)-urea injection	Oxides of Nitrogen

16

## Potential Air Emissions – Wheelabrator - Concord

	Highest Rate	24-Hr Impact ug/m <sup>3</sup>	AAL ug/m <sup>3</sup>	24-Hr Pass	%of AAL	Annual Impact ug/m <sup>3</sup>	AAL ug/m <sup>3</sup>	Annual Pass	%of AAL
Arsenic (As)	0.0213	0.0045	0.036	Pass	12.4%	0.00058	0.024	Pass	2.4%
Chromium (Cr)	0.0073	0.0015	0.036	Pass	4.26%	0.00020	0.024	Pass	0.82%
Lead (Pb)	0.174	0.037	0.18	Pass	20.3%	0.0047	0.12	Pass	3.9%
Antimony (Sb)	0.00270	0.00057	1.8	Pass	0.03%	0.000073	1.2	Pass	0.006%
Cadmium (Cd)	0.0027	0.00057	0.0070	Pass	8.10%	0.000073	0.0050	Pass	1.46%
Mercury (Hg)	0.0018	0.00038	0.30	Pass	0.13%	0.000049	0.30	Pass	0.02%
Nickel (Ni)	0.0033	0.00069	0.36	Pass	0.19%	0.000089	0.24	Pass	0.04%
Selenium (Se)	0.00027	0.000057	0.71	Pass	0.008%	0.0000073	0.48	Pass	0.002%

Highest rate (lb/hr) is the highest concentration detected of each constituent from the four annual stack tests performed at the Maine facility.

Calculations:

24 hour impact  $\text{ug m}^{-3}$  = emission rate (lb/hr)  $\times 0.21 \text{ ug m}^{-3} / \text{lb/hr}$   
 Annual impact  $\text{ug m}^{-3}$  = emission rate (lb/hr)  $\times 0.007 \text{ ug m}^{-3} / \text{lb/hr}$   
 % of AAL = [(24-Hr Impact / AAL) \* 100]

17

## C&D Wood Fuel in Other States- Connecticut

- ◉ Allows combustion of “regulated wood fuel”
  - Processed wood from C&D activities
  - Biomass gasification or resource recovery facilities
- ◉ Must submit a plan for acceptance of C&D wood at such a facility and obtain a permit
- ◉ Permit prescribes fuel inspection and testing



18

## C&D Wood Fuel In Other States

### Maine

- ◉ Allows substitution of 50% C&D wood in boilers and cement kilns
- ◉ Must submit an Operations Manual, Fire Safety Action Plan, and Quality Assurance/Quality Control plan
- ◉ Must meet fuel quality standards



19

---

---

---

---

---

---

---

---

## C&D Wood Fuel In Other States

### Maine

- ◉ C&D wood fuel quality standards
  - Prior to blending with other fuels at processing facility
  - Non-combustible fraction exclusive of rocks, brick and concrete <1%
  - Plastics <1%
  - CCA (chromated copper arsenate) treated wood <1.5%
  - Fuel quality standards for blended biomass wood fuel at combustion facility
    - Arsenic <50 mg/kg
    - Lead <375 mg/kg
    - PCB <0.74 mg/kg



20

---

---

---

---

---

---

---

---

## C&D Wood Fuel In Other States

### Maine

- ◉ Certification of C&D wood source(s) by independent 3<sup>rd</sup> party (*combustion facility responsible for this*)
  - Minimum of 4 composite samples collected over a 30 day period
  - Annual recertification, which entails 1 composite sample per 10,000 tons, or 4 samples per year if less than 40,000 tons is received from a source each year
  - Samples are composited from a minimum of 20 quart samples



21

---

---

---

---

---

---

---

---

## Tentative Rulemaking Schedule

Initial Stakeholder Meeting	June 30
Request Initial Stakeholder Input by	July 15
Draft rule stakeholder process	August
DES draft rule to DES legal dept.	September
Air Resources Council review	October
Fiscal Impact Statement submitted	November
Public Hearing and Comment period	December
File with Office of Legislative Services	January 2017



22

---

---

---

---

---

---

---

---

## NHDES Seeking Stakeholder Input

- ◉ Fuel Quality Standards
  - HB 1428 references EPA NHSM
  - Additional standards warranted?
    - Parameters
    - Basis
- ◉ Test Methods



23

---

---

---

---

---

---

---

---

## Comments to:

- ◉ Felice Janelle, SIP Planning Analyst  
[felice.janelle@des.nh.gov](mailto:felice.janelle@des.nh.gov)  
 603-271-4848
- ◉ Information regarding this rulemaking will be posted at  
<http://des.nh.gov/organization/commissioner/fuel-standards.htm>



24

---

---

---

---

---

---

---

---